



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/891,559	06/26/2001	Alphonsus V. Pocius	56820USA1A	1891

7590 07/25/2003

Attention: Alan Ball
Office of Intellectual Property Counsel
3M Innovative Properties Company
P.O. Box 33427
St. Paul, MN 55133-3427

EXAMINER

LAM, CATHY FONG FONG

ART UNIT

PAPER NUMBER

1775

DATE MAILED: 07/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/891,559

Applicant(s)

POCIUS ET AL.

Examiner

Cathy Lam

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 1-8 and 18-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 9-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2, 3. 6) ☐ Other: _____

Art Unit: 1753

DETAILED ACTION

Election/Restriction

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-8 and 18-20, drawn to a composition and a method using the composition, classified in class 204, subclass 471+.
- II. Claims 9-17, drawn to a printed circuit, classified in class 428, subclass 457.

2. The inventions are distinct, each from the other because of the following reasons: Inventions of Groups I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by a non-electrodepositing process.

Art Unit: 1753

3. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Attorney A. Ball on May 28, 2003 a provisional election was made with traverse to prosecute the invention of Group II, claims 9-17. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-8 and 18-20 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

Specification

1. The abstract of the disclosure is objected to because it is not written in a single paragraph. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Funaya et al (US 6042682) in view of Himes et al (US 6046886).

Funaya discloses a supporting substrate which is to be bonded with a semiconductor bare chip.

The supporting substrate is comprised of a substrate (1), a conductive thin film (2), an electrode pad (3) and a bump (4) (Fig. 2B). A sealing resin film (5) is formed onto the surface of the supporting substrate.

The sealing resin film comprises of an epoxy resin having a fluorine skeleton structure. The sealing resin film can be cured by activation energy ray such as UV, e-beams, etc. (col 4 L 63-67).

The supporting substrate can be a flexible board (col 11L 43-45). The sealing resin can be a phenol novolak type epoxy resin, cresol novolak type epoxy resins (col 5 L 8-11).

Funaya's sealing resin film has no voids after bonded with a semiconductor chip (col 2 L 15-20).

Funaya however does not teach that the sealing resin film is over the conductive bump (4).

Himes teaches a flex circuit board interconnect comprised of a dielectric base layer (28), conductors (30) and a cover dielectric layer (32) (Fig. 2). Figure 2 of Himes is a conventional flexible circuit structure.

The prior art teaches the present invention but are silent about the concentration of extractable ionic contaminants, the concentration of labile components and the bend radius.

In view of Funaya and Himes' teachings, one skill in the art would use the sealing resin material as taught by Funaya and use as a cover dielectric in Himes' because Funaya's sealing resin gives a strong seal and contains no air bubbles or voids between components.

Furthermore, Funaya's sealing resin would inherently contain the properties as claimed by the applicant since the epoxy resin disclosed by Funaya meets the claimed invention (as in claim 12).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (703) 308-2418. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (703) 308-3822. The fax phone

Art Unit: 1775

numbers for the organization where this application or proceeding is assigned are (703) 872-9604 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Cathy Lam
Primary Examiner
Art Unit 1775

cfl
July 22, 2003